REMARKS/ARGUMENTS

Claims 1-5, 10, 12-15, 17-20, 22 and 32-33 are currently pending in the application. Claims 23-31 have been withdrawn with traverse as the result of a restriction requirement. A petition for a one month extension is included with this response along with a credit card authorization for the required fees. Claims 1-5, 10, 12-15, 17-20, 22 and 32-33 were rejected in the Office Action mailed January 11, 2007 (hereinafter referred to as "Office Action"). It is believed that no other fees are due at this time. In view of the following remarks and amendments, applicant respectfully requests a timely Notice of Allowance be issued in this case.

Telephone Interview

Applicant thanks the Examiner for the telephone interview of March 7, 2008. Applicant explained the invention and the central points that may have been confusing during examination. More specifically, the following points were discussed:

(a) Figure 4D, the closed-loop hierarchical manner, and the closed-loop life cycle are described in numerous paragraphs of the original disclosure, not just paragraph [0069];

(b) the annotated version of Figure 4D in Applicant's last response was for demonstrative purposes only; and

(c) clarification of terminology used in the claims.

Applicant respectfully submits that the foregoing amendments and the following discussion build upon the productive discussion of the interview to further clarify the invention and simplify the claims.

The term "closed-loop"

The term "closed-loop" refers to the fact that infrastructures can be characterized as closed-loop systems because they have definable boundaries in which the infrastructure elements reside (emphasis added):

> [0005] . . . **In recognition of these deficiencies, the present invention relies on the fact that infrastructures are closed-loop systems – the connected devices are integral to allow end-devices to operate.** For instance, in a waterworks system, if a supply pipe is removed, water will run-out of the entire system and down-stream faucets will be affected. Likewise, a telephone system central office is an integral part for the end-points - home telephones - to operate. If the telephone central office is removed, outlying telephones will be affected. Similarly, in a power system, removal of an electrical power station or transmission lines will affect electricity distribution to other locations. **Accordingly, infrastructures have definable boundaries and sub-elements that connect together to make-up the entire system. For example, a picture puzzle contains boundary pieces and individual pieces. Just like a puzzle, each piece of an**

> **infrastructure is related to the other elements of the system – one piece does not exist outside the boundaries of the entire system.**

The original disclosure provides examples of infrastructures (roads, electrical systems, waterworks and even puzzles) that illustrate this concept.

Unlike the prior art, the present invention links the records within the data structure to reflect the "closed-loop" nature of the infrastructure being managed. As a result, the present invention provides a more accurate, simpler and less complex infrastructure management system (emphasis added):

> [0004] The present invention provides a method, computer program, relational database, system and apparatus to manage information related to infrastructure assets. **The present invention uses a combination of techniques that increases the likelihood that the system contains accurate, complete data and in a fashion that relates the information of infrastructure asset, asset related items and sub-elements through a hierarchy to the people who use the information. The present invention is specialized to take advantage of the unique characteristics of infrastructure systems using a dual closed-loop structure to represent the assets in: (1) a hierarchical fashion patterned after the actual connections in the infrastructure; and (2) the life cycle of the assets.** The asset and associated information are also related to the people who use them. **As a result, the present invention is simpler and less complex than auto-discovery software or auto-location devices. The present invention has inherent checks and balances (e.g., storing the information in a closed-loop fashion, providing reporting and workflow techniques, etc.) that increase its accuracy and usability over other generic asset management systems.**
>
> [0038] … [T]he data is stored in a hierarchical relationship based on how the information is interconnected or how people use the asset, or use the information. **When the data is stored in this fashion, the information is in a closed-loop – where information is related to other information in the system, or related to a system boundary or related to a person.**

Accordingly, the foregoing amendments to the claims are intended to more closely track the exact language used in the original disclosure and simplify the claims.

Claim Rejections under 35 U.S.C. § 101

Claims 1-5, 10, 12-15, 17-20, 22 and 32-33 were rejected in the Office Action under 35 U.S.C. § 101 because the claimed invention is allegedly inoperative and therefore lacks utility. More specifically, the Office Action states that claims 1, 12, 20 and 32 contain the phrase "all the records are linked to one another in a dual closed loop structure" which makes the claimed invention inoperative "[s]ince all the records have to be linked to one another and dual closed loops are not connected to each other, it is not possible to link all the records together in a dual closed loop structure." Applicant respectfully disagrees.

Nonetheless, claims 1, 12, 20 and 32 have been amended to eliminate the term "dual closed-loop". As a result, applicant respectfully submits that claims 1, 12, 20 and 32, as amended, are operative and provides utility. Accordingly, applicant respectfully submits that claims 1-5, 10, 12-15, 17-20, 22 and 32-33 are allowable under 35 U.S.C. § 101. Applicant requests that the rejections be withdrawn.

Claim Rejections under 35 U.S.C. § 112, first paragraph

Claims 1-5, 10, 12-15, 17-20, 22 and 32-33 were rejected in the Office Action under 35 U.S.C. § 112, first paragraph, for claiming subject matter that was allegedly not described in the specification. More specifically, the Office Action stated claims 1, 12, 20 and 32 include:

(a) the phrase "all the records are linked to one another in a dual closed loop structure" which is not recited in the original disclosure;

(b) the term "business interconnection rules" cannot be located in the original disclosure;

(c) the phrases "a hierarchical manner forming a first closed loop" and "a life cycle forming a second closed loop" have no support in the original disclosure; and

(d) the phrase "a record for each asset or asset related item is linked to one or more records in the first closed loop and one or more records in the second closed loop" has no support in the original disclosure.

Applicant respectfully disagrees for all the reasons stated below.

(a) "all the records are linked to one another in a dual closed loop structure"

As stated above with respect to the Section 101 rejections, claims 1, 12, 20 and 32 have been amended to eliminate the term "dual closed-loop". In addition, applicant respectfully submits that the phrase "all the records are linked to one another" is fully supported in the original disclosure (emphasis added):

> [0005] More specifically, the present invention provides a system for managing an infrastructure that includes a network, one or more client computers communicably coupled to the network, a user interface communicably coupled to each client computer, one or more server computers communicably coupled to the network, a database communicably coupled to the server computer and a computer program. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another** in a closed-loop hierarchical manner in accordance with one or more business rules.
>
> [0006] The present invention also provides an apparatus for managing an infrastructure that includes a computer, a user interface communicably coupled to the computer, a database communicably coupled to the computer and a computer program. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the

> infrastructure. In addition, **all of the records are linked to one another** in a closed-loop hierarchical manner in accordance with one or more business rules.
>
> [0007] In addition, the present invention provides a method for managing an infrastructure by providing a database, processing one or more user requests to display or report information stored in the database and updating the database as assets or asset related items are procured, implemented, changed or disposed. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another** in a closed-loop hierarchical manner in accordance with one or more business rules.
>
> [0025] Now referring to FIGURE 1, a block diagram of an Infrastructure Management System ("IMS") 120 in accordance with one embodiment of the present invention is shown. The system 120 includes a network 105, one or more client computers 103 communicably coupled to the network 105, a user interface 130 (101, 102, 112 and/or 113) communicably coupled to each client computer 103, one or more server computers 106, 108 and/or 110 communicably coupled to the network 105, a database or repository 111 communicably coupled to the server computer 110 and a computer program 104, 107 and/or 109. The database 111 contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another** in a closed-loop hierarchical manner in accordance with one or more business rules.
>
> [0028] The present invention can also be implemented as an apparatus for managing an infrastructure that includes a computer, a user interface communicably coupled to the computer, a database communicably coupled to the computer and a computer program. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another** in a closed-loop hierarchical manner in accordance with one or more business rules.

As a result, applicant respectfully submits that claims 1, 12, 20 and 32, as amended, are fully described in the specification in such a way to reasonably convey to one skilled in the art of relational database design and asset management that the inventor, at the time the application was filed had possession of the claimed invention and is not new matter. Accordingly, applicant respectfully submits that claims 1-5, 10, 12-15, 17-20, 22 and 32-33, as amended, are allowable under 35 U.S.C. § 112, first paragraph. Applicant requests that the rejections be withdrawn.

(b) "business interconnection rules"

Applicant respectfully submits that the term "business interconnection rules' is merely a shorted term for the longer phrase "business rules that define how the assets and asset related items are interconnected" which is fully supported in the original disclosure (emphasis added):

> [0005] … **The one or more business rules define how the assets and asset related items are interconnected** or how one or more users use the assets and asset related items or how one or more users use the information stored in the one or more data fields associated with the assets and asset related items.

> [0006] … **The one or more business rules define how the assets and asset related items are interconnected** or how one or more users use the assets and asset related items or how one or more users use the information stored in the one or more data fields associated with the assets and asset related items.
>
> [0007] … **The one or more business rules define how the assets and asset related items are interconnected** or how one or more users use the assets and asset related items or how one or more users use the information stored in the one or more data fields associated with the assets and asset related items.
>
> [0025] … **The one or more business rules define how the assets and asset related items are interconnected** or how one or more users use the assets and asset related items or how one or more users 100 use the information stored in the one or more data fields associated with the assets and asset related items.

Nonetheless, claims 1, 12, 20 and 32 have been amended to eliminate the term "interconnection." As a result, applicant respectfully submits that claims 1, 12, 20 and 32, as amended, are fully described in the specification in such a way to reasonably convey to one skilled in the art of relational database design and asset management that the inventor, at the time the application was filed had possession of the claimed invention and is not new matter. Accordingly, applicant respectfully submits that claims 1-5, 10, 12-15, 17-20, 22 and 32-33, as amended, are allowable under 35 U.S.C. § 112, first paragraph. Applicant requests that the rejections be withdrawn.

(c) "a hierarchical manner forming a first closed loop" and "a life cycle forming a second closed loop"

Closed loop data structures of a "hierarchical" manner and "life cycle" are central themes to the original disclosure, and are cited in numerous places in the original disclosure. These "dual loops", are fully supported in the original disclosure. More specifically, applicant respectfully submits that these terms are supported throughout the specification and drawings, including, but not limited to paragraphs [0004]-[0007], [0023], [0025], [0028], [0033]-[0035], [0038]-[0039], [0042], [0052], [0062], [0065]-[0067], [0069]-[0071] and FIGURES 4B, 5 and 6A (emphasis added):

> [0004] The present invention provides a method, computer program, relational database, system and apparatus to manage information related to infrastructure assets. The present invention uses a combination of techniques that increases the likelihood that the system contains accurate, complete data and in a fashion that relates the information of infrastructure asset, asset related items and sub-elements through a hierarchy to the people who use the information. The present invention is specialized to take advantage of the unique characteristics of infrastructure systems using a **dual closed-loop structure to represent the assets in: (1) a hierarchical fashion patterned after the actual connections in the infrastructure; and (2) the life cycle of the assets**. The asset and associated information are also related to the people who use them. As a result, the present invention is simpler and less complex than auto-discovery software or auto-location devices. The present invention has inherent checks and balances (e.g., **storing the information in a closed-loop fashion**, providing reporting and workflow techniques,

etc.) that increase its accuracy and usability over other generic asset management systems.

[0005] More specifically, the present invention provides a system for managing an infrastructure that includes a network, one or more client computers communicably coupled to the network, a user interface communicably coupled to each client computer, one or more server computers communicably coupled to the network, a database communicably coupled to the server computer and a computer program. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another in a closed-loop hierarchical manner in accordance with one or more business rules**. The computer program is embodied on a computer readable medium and is executed by the one or more server computers to manage the infrastructure using the database and provide the one or more client computers with access to the database. The one or more business rules define how the assets and asset related items are interconnected or how one or more users use the assets and asset related items or how one or more users use the information stored in the one or more data fields associated with the assets and asset related items.

[0006] The present invention also provides an apparatus for managing an infrastructure that includes a computer, a user interface communicably coupled to the computer, a database communicably coupled to the computer and a computer program. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another in a closed-loop hierarchical manner in accordance with one or more business rules**. The computer program is embodied on a computer readable medium and is executed by the computer to manage the infrastructure using the database. The one or more business rules define how the assets and asset related items are interconnected or how one or more users use the assets and asset related items or how one or more users use the information stored in the one or more data fields associated with the assets and asset related items.

[0007] In addition, the present invention provides a method for managing an infrastructure by providing a database, processing one or more user requests to display or report information stored in the database and updating the database as assets or asset related items are procured, implemented, changed or disposed. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another in a closed-loop hierarchical manner in accordance with one or more business rules**. The one or more business rules define how the assets and asset related items are interconnected or how one or more users use the assets and asset related items or how one or more users use the information stored in the one or more data fields associated with the assets and asset related items. The database can be created by identifying one or more boundaries for the infrastructure, identifying the assets within the boundaries, identifying the items related to the assets, determining the attributes associated with each asset and asset related item, determining the business rules for how the assets and related items are linked together, and **creating each record and storing the record in the database in a closed-loop hierarchical**

manner in accordance with the business rules. Moreover, the database can be customized, upgraded, validated or increased by adding additional assets, related items, attributes, users or increasing a boundary. These methods can be implemented using a computer program embodied on a computer readable medium wherein the steps are performed by one or more code segments.

[0023] The present invention provides a method, computer program, relational database, system and apparatus to manage information related to infrastructure assets. The present invention uses a combination of techniques that increases the likelihood that the system contains accurate, complete data and **in a fashion that relates the information of infrastructure asset, asset related items and sub-elements through a hierarchy to the people who use the information**. The present invention is specialized to take advantage of the unique characteristics of infrastructure systems using **a dual closed-loop structure to represent the assets in: (1) a hierarchical fashion patterned after the actual connections in the infrastructure; and (2) the life cycle of the assets**. The asset and associated information are also related to the people who use them. As a result, the present invention is simpler and less complex than auto-discovery software or auto-location devices. The present invention has inherent checks and balances (e.g., **storing the information in a closed-loop fashion**, providing reporting and workflow techniques, etc.) that increase its accuracy and usability over other generic asset management systems.

[0025] Now referring to FIGURE 1, a block diagram of an Infrastructure Management System ("IMS") 120 in accordance with one embodiment of the present invention is shown. The system 120 includes a network 105, one or more client computers 103 communicably coupled to the network 105, a user interface 130 (101, 102, 112 and/or 113) communicably coupled to each client computer 103, one or more server computers 106, 108 and/or 110 communicably coupled to the network 105, a database or repository 111 communicably coupled to the server computer 110 and a computer program 104, 107 and/or 109. The database 111 contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another in a closed-loop hierarchical manner in accordance with one or more business rules**. The one or more business rules define how the assets and asset related items are interconnected or how one or more users use the assets and asset related items or how one or more users 100 use the information stored in the one or more data fields associated with the assets and asset related items.

[0028] The present invention can also be implemented as an apparatus for managing an infrastructure that includes a computer, a user interface communicably coupled to the computer, a database communicably coupled to the computer and a computer program. The database contains two or more records, each record having a unique identifier and one or more data fields representing attributes of an asset or asset related item within the infrastructure. In addition, **all of the records are linked to one another in a closed-loop hierarchical manner in accordance with one or more business rules**. The computer program is embodied on a computer readable medium and is executed by the computer to manage the infrastructure using the database. The database and computer program are the same as previously described.

[0033] **The present invention also recognizes that closed-loop infrastructures are comprised of interconnecting sub-elements. For instance, in a roadwork system, the sub-elements could be defined as single-lane roads, dual-lane streets, multi-lane parkways and freeways. Likewise, a communications system has transmitters, transmitting antennas, radio frequencies, receiving antennas and receiver sub-elements. Similarly, a computer network may include servers, switches, routers, CSU/DSUs and network circuits.** Accordingly, the next step in the process 230 is for the managing agency to define the sub-elements of the system to be tracked and the attributes associated with those sub-elements in block 206. Note that these sub-elements may also have sub-elements. For instance, in a computer network, a server has a network interface as a sub-element to the computer. The network interface has an IP Address as a sub-element. The network interface has attributes, which may include the model number, software driver, protocol type, communication speed, or other defining attributes.

[0034] In addition, **closed-loop infrastructures are connected according to an associated business-rule dependent hierarchy**. The governing agency defines or knows of the rules on how the infrastructure sub-elements interconnect. Unlike an end-device, such as a home-owners water softener appliance, for example, that is connected on the end of the water work system, internal infrastructure elements are connected and built-together in a logical fashion for the entire system to operate properly. Accordingly, the next step in the process 230 is to define the business rules for how the assets (T), asset related items (RT) and sub-elements interrelate or link together in block 207. In many cases these relationships are defined based on the technology used in the infrastructure system, or they are sometimes defined by the managing agency.

[0035] **Another feature of the present invention is that information elements are related, in a hierarchy, to people.** It is important to remember that the value of the infrastructure comes from the services it provides to people. These devices have no value in and of themselves; the value comes from their relation to people or the business that use the infrastructure system. Accordingly, the asset or asset information is linked to the people who use the asset or asset information indicating relationships. For instance, the value of an electronic router comes from its ability to transmit data that people ultimately use. The value of a server comes from the data it stores and manipulation of information that people ultimately use. **The present invention relates asset information in a hierarchical manner for the practical use by people.** For example, information on a network device maintenance contract is useful to the support people who maintain network devices. The information on the maintenance contract is valuable as it is related to the device covered in the maintenance contract. In this example, having ready access to this data is important for support personnel. Accordingly, the next step in the process 230 is to identify the people who use the infrastructure assets and use the infrastructure asset information in block 208.

[0038] Once the system is designed and constructed in block 232, the next step is to enter or import data about the assets, sub-elements, related items and attributes into the IMS repository or database 211 in block 211. **Again, the data is stored in a hierarchical relationship based on how the information is interconnected or how people use the asset, or use the information. When the data is stored in this fashion, the information is in a closed-loop – where information is related to other information in the system, or related to a system boundary or related to a person**.

Once the IMS system is constructed (e.g., implementation of the IMS apparatus or system in FIGURE 1 (101, 102, 103, 104, 105, 106, 107, 109, 110, 112); construction of the IMS Software Program 109 (FIGURE 1); construction of the IMS database or repository 111 (FIGURE 1 and 2A); and entry or importation of the data on the infrastructure 211 (FIGURE 2A)), the system is ready to be used to manage the infrastructure as will be described below in reference to FIGURE 2B.

[0039] In summary, the database can be created by identifying one or more boundaries for the infrastructure (block 201), identifying the assets within the boundaries (block 203), identifying the items related to the assets (block 204), determining the attributes associated with each asset and asset related item (block 205), determining the business rules for how the assets and related items are linked together (block 206), and **creating each record and storing the record in the database in a closed-loop hierarchical manner in accordance with the business rules** (block 211). The additional or optional steps may include: identifying a managing agency (block 201) and determining one or more goals for the managing agency (block 202); determining one or more sub-elements for the assets and one or more attributes associated with the sub-elements (block 206) and determining one or more business rules for how the sub-elements and assets are linked together (block 207); identifying one or more people who use the assets (block 208); identifying one or more people who use information about the asset (block 208); or designing data display and report formats (block 209).

[0042] Now referring to FIGURE 2B, a flowchart illustrating the process 236 for managing an infrastructure in accordance with one embodiment of the present invention is shown. The IMS Software Program 109 (FIGURE 1) allows the authorized users to use the system in block 212. The user 100 (FIGURE 1) can access the database 111 using the IMS Software Program 109 (FIGURE 1) to display asset information in block 213 or prints reports in block 214 based on user requests. **As previously discussed, the present invention captures data about an asset at each stage of the asset's existence or life cycle in block 215 (e.g., procurement, usage, modification, decommission and salvage information).** People know information about assets when they are purchased, when they are implemented, when they change, and when they are disposed. When information is captured at each stage of the asset's life cycle, there is no need to auto-discover the existence of the device. Hence, the present invention eliminates the necessity of such auto-discovery, auto-tracking, or auto-location techniques. If the system meets the managing agency's goals, as determined in decision block 216, use of the system is continued and process 236 continues. If, however, the system does not meet the managing agency's goals, as determined in decision block 216, the database is improved as will be described in reference to FIGURE 2C.

[0052] Returning to the picture puzzle example, a picture puzzle is correct when all of the pieces are used and all of the pieces are fit together. When all of the pieces are identified and connected together, the likelihood increases that the picture is correct. If pieces are not identified or left unconnected, not only are pieces of the puzzle missing, but the pieces at the edges that do not have pieces connected may also be incorrect. A completed puzzle, with all the pieces fitting with each other, **creates a closed-loop that increases the likelihood that the entire puzzle is connected together correctly**. The approach in designing and using the present invention is to create a web of information

that interlocks and therefore checks itself. Just as adding more assets to the systems increases value, adding more link characteristics increases accuracy.

[0062] The business rules for device interconnections seldom change. Often, technological barriers need to be eliminated to change the business rules for how devices interconnect. For instance, telephone systems were exclusively wire line services until wireless communications were invented. Computers all had internal disk storage until storage area networks were invented. Likewise, until automobiles can fly, vehicular transportation systems operate on land-based systems. **With each closed-loop infrastructure, there is a finite number of links within a system that we define as the total links ("TL"). The link is the relationship how the sub-elements interact.**

[0065] The ISM Software Program 109 creates data tables and data records that contain the attribute information about each asset, sub-element and related thing. **Each of these records has a unique record identifier ("ID"). The ISM Software Program 109 will store these records in the ISM Relational Database repository 111 with sufficient unique record identifiers to relate each data record to their other related data records.** The present invention stores asset data with relationships in the same physical or logical fashion as the devices are interrelated. In using this approach, the data pieces fit together, much like a puzzle, in a fashion that checks itself. The likelihood increases that a puzzle is correct when all of the pieces are included and they all interlock and fit neatly together.

[0066] Now referring to FIGURE 4D, an example data relationship associated with a computer network router is shown. Information about the router 418 is stored first. This database record is created in a fashion 428 that includes a reference in the router data record 418 that incorporates a record identifier that relates to the location data record 419, associated with where the router is physically located. **When assets or information about that asset are connected together according to the hierarchy, as they physically or logically exist, you can determine the location or information of one asset from its relation to other connected or interrelated assets.** Information about a network interface connected to the router is saved as a separate data record 420 in a format 427 that relates to the router data record 418. **Other data records 422, 423, 424, 425 that relate information to the router are also stored in a hierarchical manner that point to the related router asset record ID # 418.**

[0067] With the present invention, the addition of static business rules in the data capture process enhances the quality of the data. **The interconnection relationship information gives records in the ISM repository more meaning than the record existing without the relationship. The relationship of how one data element interrelates to the other data elements is the added information value. For infrastructure systems, each asset is related to another asset and is within a system boundary. All assets connect through a hierarchy, related to a system boundary at the lowest level and related to a person at the upper-most level.** No assets exist outside the boundaries of the infrastructure.

[0069] Take the example of the router asset record 418 in FIGURE 4D. **This information record is interconnected with several other information records 419, 420, 422, 423, 424, 425. There is a closed-loop around this data element, where removal of the router data record 418 affects the associated interrelated information**

records. As mentioned earlier, many other asset management systems focus on auto-discovery or auto-location techniques to identify the existence of an asset. Take for instance the router associated with the router asset record 418. This data record is related to a location record 419, which is in turn related to a site record 426. **From the hierarchy defined by the ID pointers in the data records, you can determine that Router ID #418 is in Location ID #419, which is located in the Data Center, at 400 Main, Dallas, Texas.** There is no need to auto-discover the location of asset devices with my invention, **where asset information is stored in a closed-loop hierarchical fashion**.

[0070] Referring now to FIGURE 5, **a block diagram illustrating the closed-loop life cycle of infrastructure assets** in accordance with one embodiment of the present invention is shown. The IMS Software Program 109 allows system users to enter procurement 500, implementation 501, usage 502, modification 503, decommission 504, and salvage 505 information. The IMS Software Program 109 is used to store this information into the IMS Relational Database repository 111. **This is another closed-loop.** Once asset information is added to the system through a procurement process, it will remain in the system until it is salved.

[0071] Now referring to FIGURE 6A, **a block diagram illustrating counter-balancing closed-loops** in accordance with one embodiment of the present invention is shown. **Both of the features: (1) to capture data at each life cycle change 600; and (2) to link the asset information in the same fashion as the business rules link sub-elements together 601 creates "counter-balancing, closed-loops" within the repository 111. A closed loop of information capture is created if data is put into the system at each point that the asset moves through its life cycle (procure 500, implement 501, use 502, modify 503, decommission 504 and salvage 505) (see also FIGURE 5). Likewise, a closed loop of information is created if all infrastructure elements are put into the system and linked to each other in a manner, as the assets are physically interrelated (water acquisition systems 370, water treatment facilities 372, pump stations 374 and water towers 376) (see FIGURE 4D). Having two closed loops forms a counter-balancing method that increases the accuracy of the entire infrastructure management system.**

Nonetheless, to simplify claims 1, 12, 20 and 32, they have been amended to eliminate the term "dual closed-loop" and instead recite a "closed-loop hierarchical manner . . . a closed-loop life cycle." As a result, applicant respectfully submits that claims 1, 12, 20 and 32, as amended, are fully described in the specification in such a way to reasonably convey to one skilled in the art of relational database design and asset management that the inventor, at the time the application was filed had possession of the claimed invention and is not new matter. Accordingly, applicant respectfully submits that claims 1-5, 10, 12-15, 17-20, 22 and 32-33, as amended, are allowable under 35 U.S.C. § 112, first paragraph. Applicant requests that the rejections be withdrawn.

(d)"a record for each asset or asset related item is linked to one or more records in the first closed loop and one or more records in the second closed loop"

This phrase has been deleted from the claims. As a result, applicant respectfully submits that claims 1, 12, 20 and 32, as amended, are fully described in the specification in such a way to

reasonably convey to one skilled in the art of relational database design and asset management that the inventor, at the time the application was filed had possession of the claimed invention and is not new matter. Accordingly, applicant respectfully submits that claims 1-5, 10, 12-15, 17-20, 22 and 32-33, as amended, are allowable under 35 U.S.C. § 112, first paragraph. Applicant requests that the rejections be withdrawn.

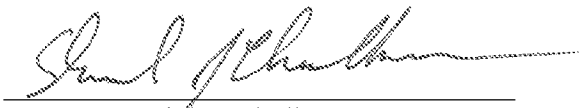
Conclusion

For the reasons set forth above, applicant respectfully requests reconsideration by the examiner and withdrawal of the restriction requirement. Applicant submits that claims 1-5, 10, 12-15, 17-20, 22 and 32-33 are fully patentable. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the examiner has any questions or comments, or if further clarification is required, it is requested that the examiner contact the undersigned at the telephone number listed below.

Date: April 18, 2008

Respectfully submitted,

CHALKER FLORES, LLP

By 

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